South Florida Ecosystem Restoration Task Force

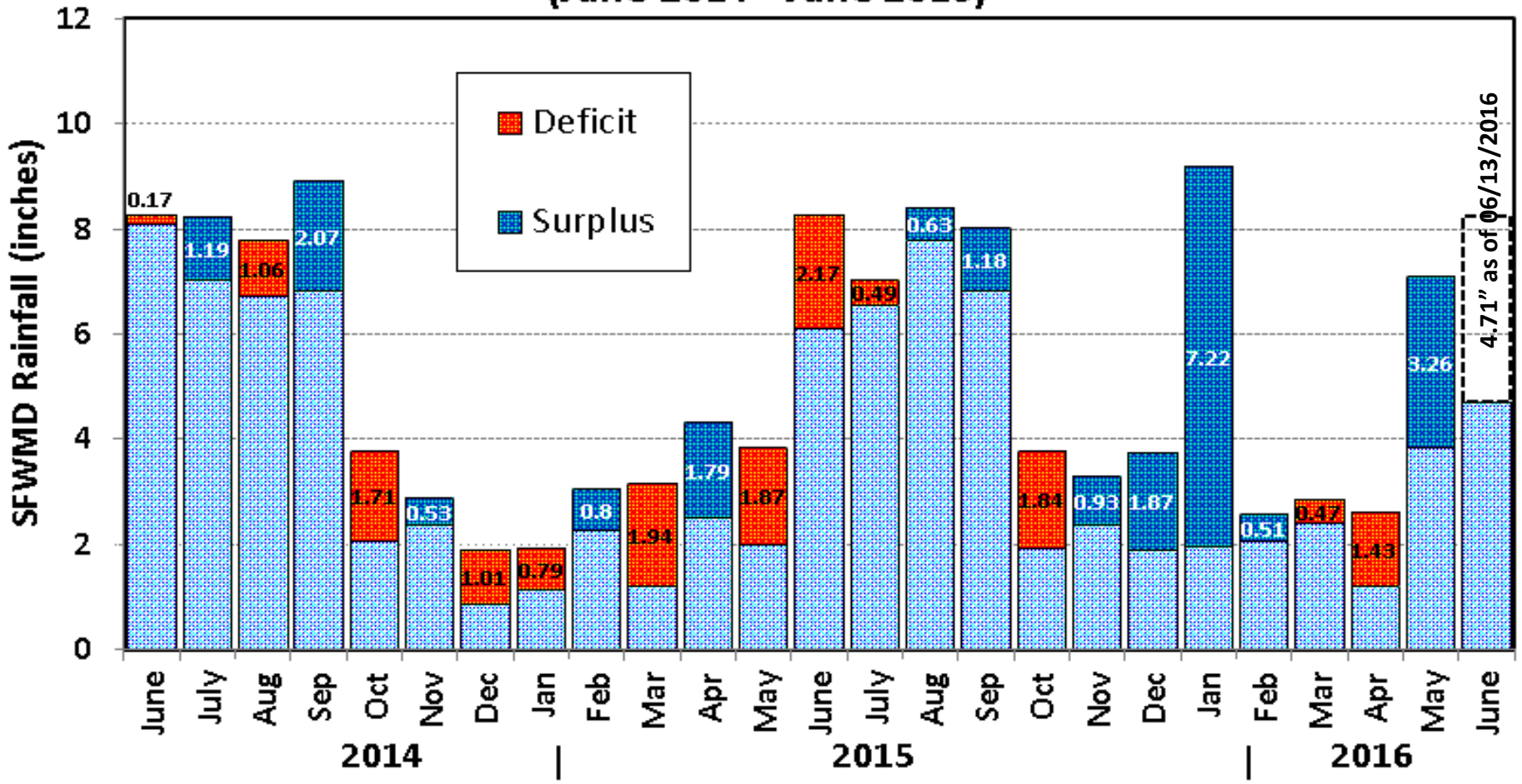
Water Conditions and Emergency Operations

June 29, 2016

John P. Mitnik, P.E.
Director, Operations Engineering and Construction Division
South Florida Water Management District

SFWMD Rainfall Distribution Comparison

(June 2014 - June 2016)



2014 WET SEASON:

- May 26th – Oct 4th
- Near average (108%)

2014-15 DRY SEASON:

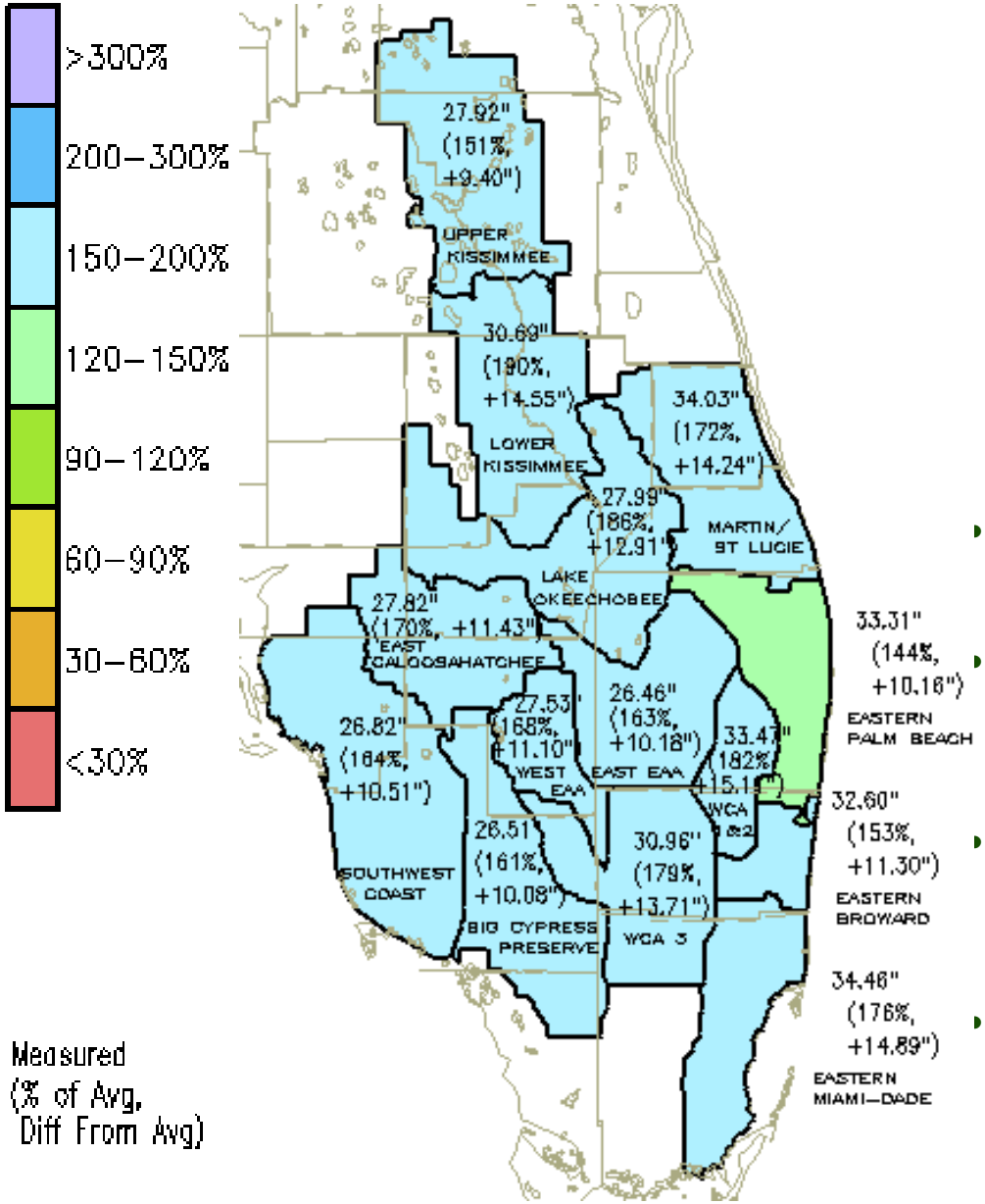
- May was 51% below average
- Dry Season 86% of average

2015 WET SEASON:

- Driest May-July since 2004
- Ended below average

2015-16 DRY SEASON:

- Nov 2015-Jan 2016 wettest since 1932
- Jan 2016 wettest since 1932
- Dry Season 168% of average



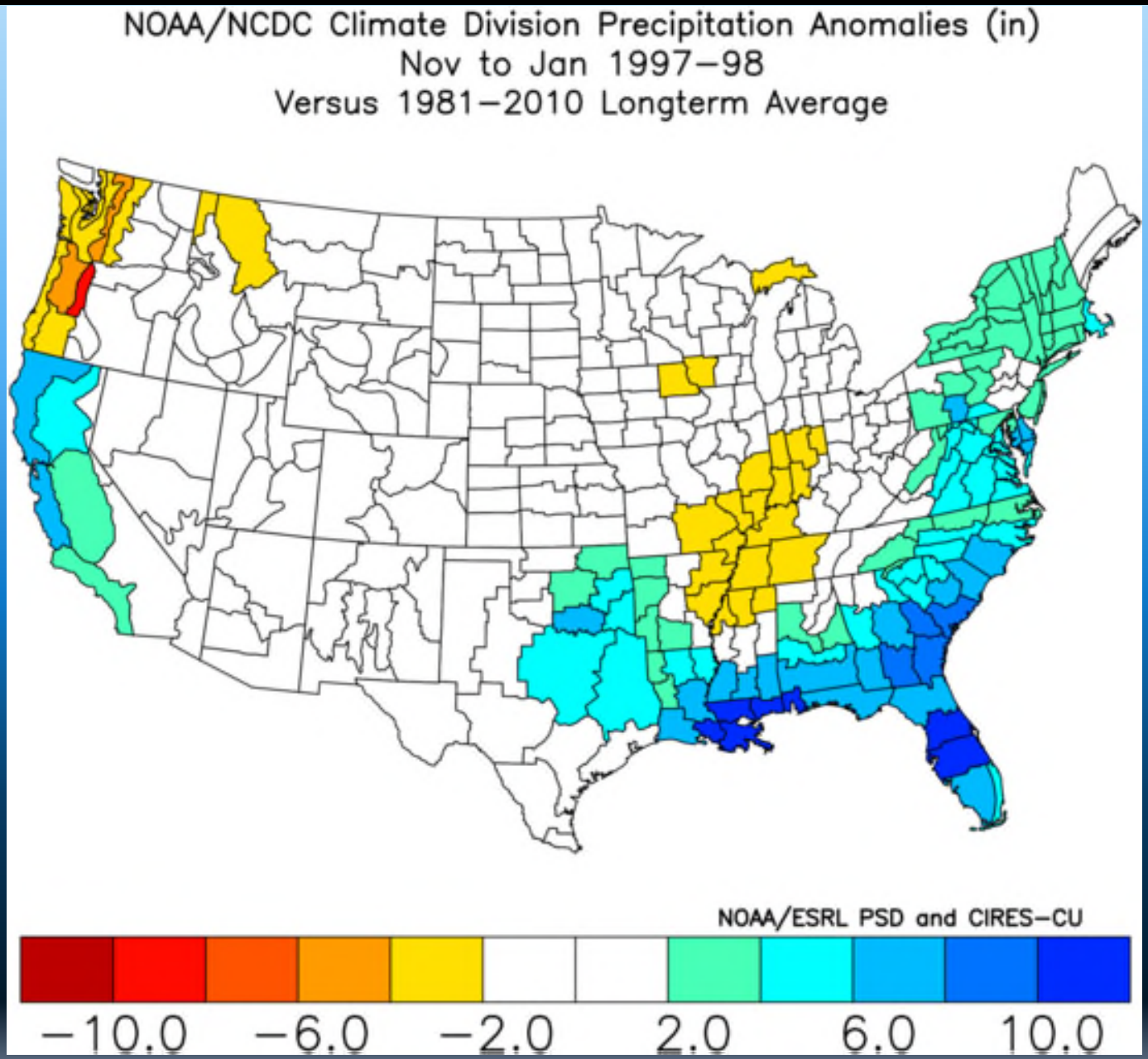
SFWMD

2015-2016 Dry Season Rainfall

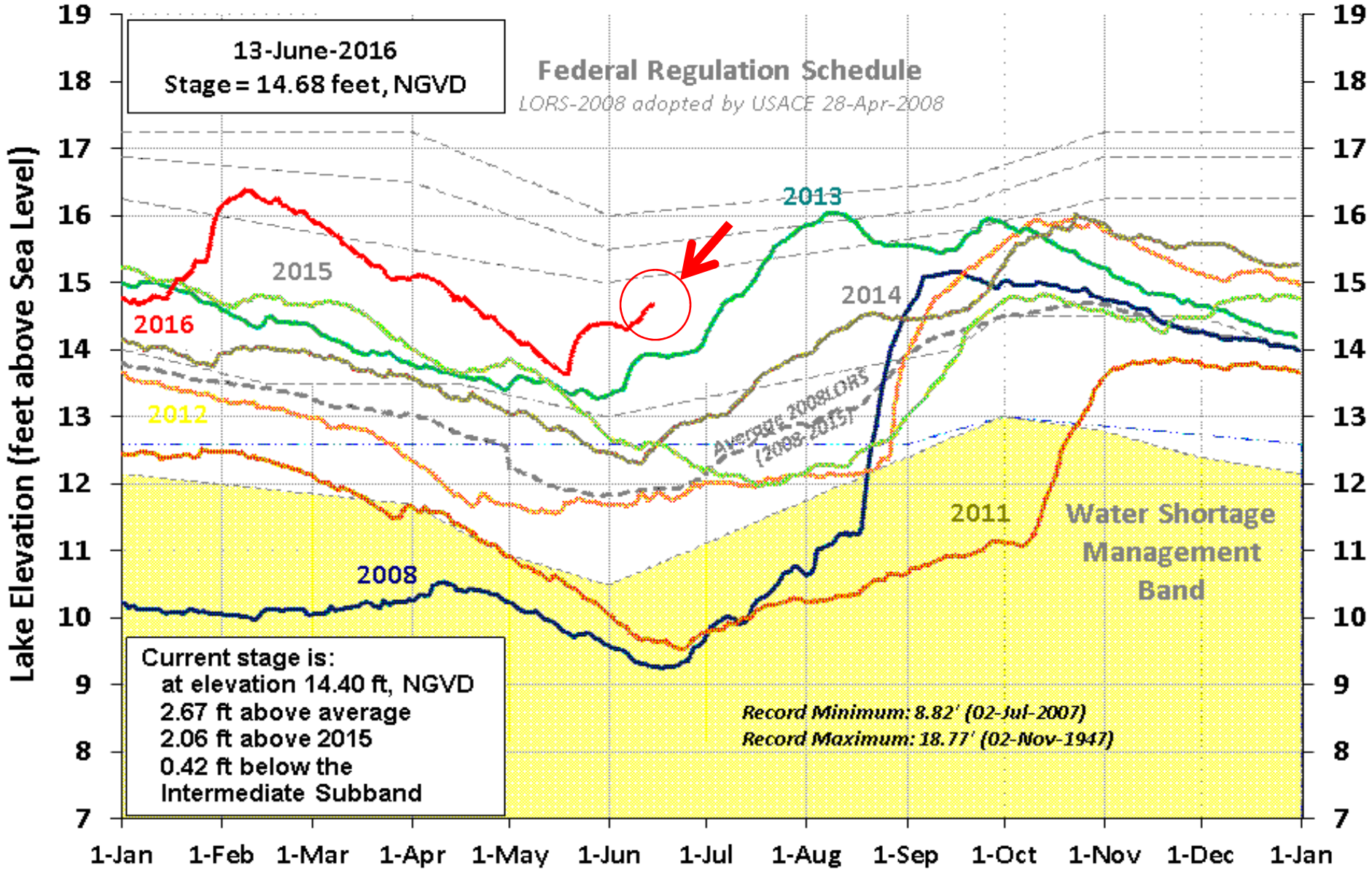
(02-Nov 2015 to 01-Jun-2016)

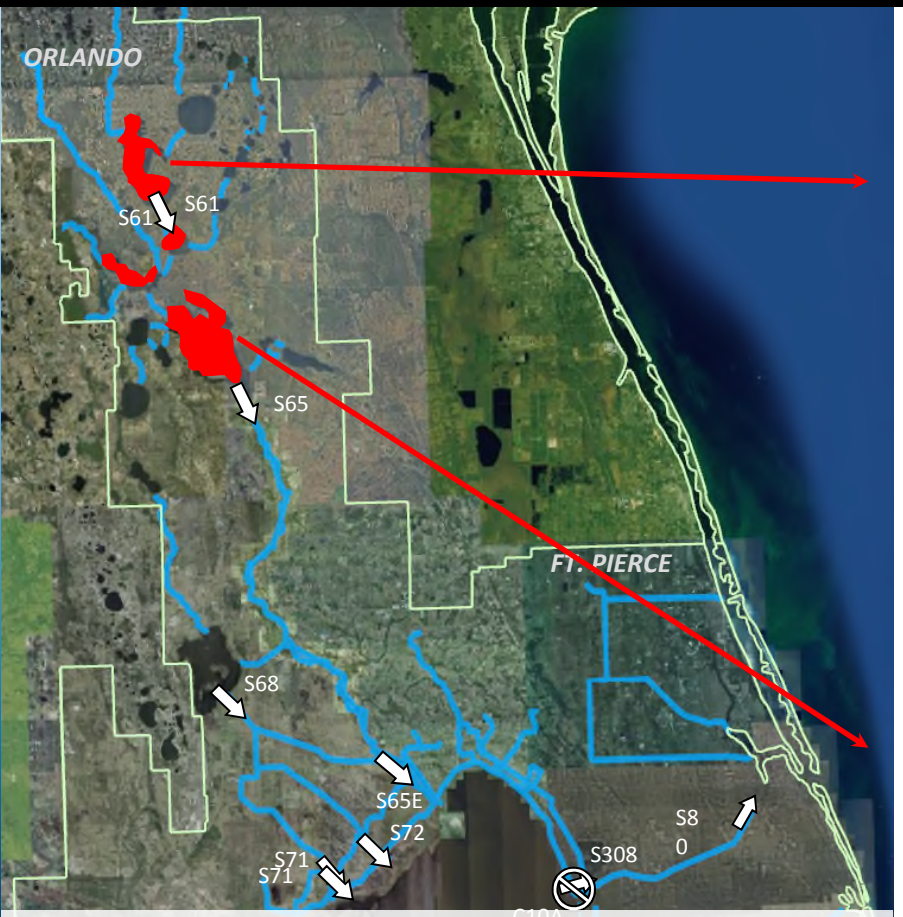
DISTRICT-WIDE: 29.49” 168% of Avg, or +11.98”)

- District rainfall for the 2016 dry season closed above average
- All basins are 150% to 200% above average, with exception of Eastern Palm Beach County with 144%
- November, December and January, was the wettest for this period since record keeping began in 1932
- Wettest Nov-May (dry season) since 1957-58 and second wettest since records began in 1932


NOAA/NCDC Climate Division Precipitation Anomalies (in)
Nov to Jan 1997–98
Versus 1981–2010 Longterm Average
NOAA/ESRL PSD and CIRES–CU
−10.0
−6.0
−2.0
2.0
6.0
10.0

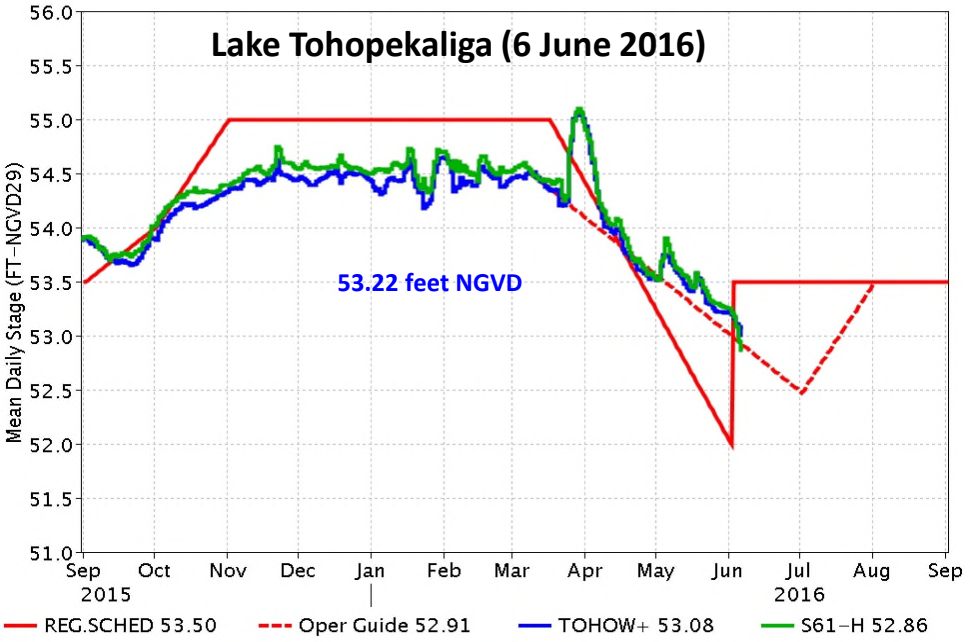
Lake Okeechobee Water Level Comparison

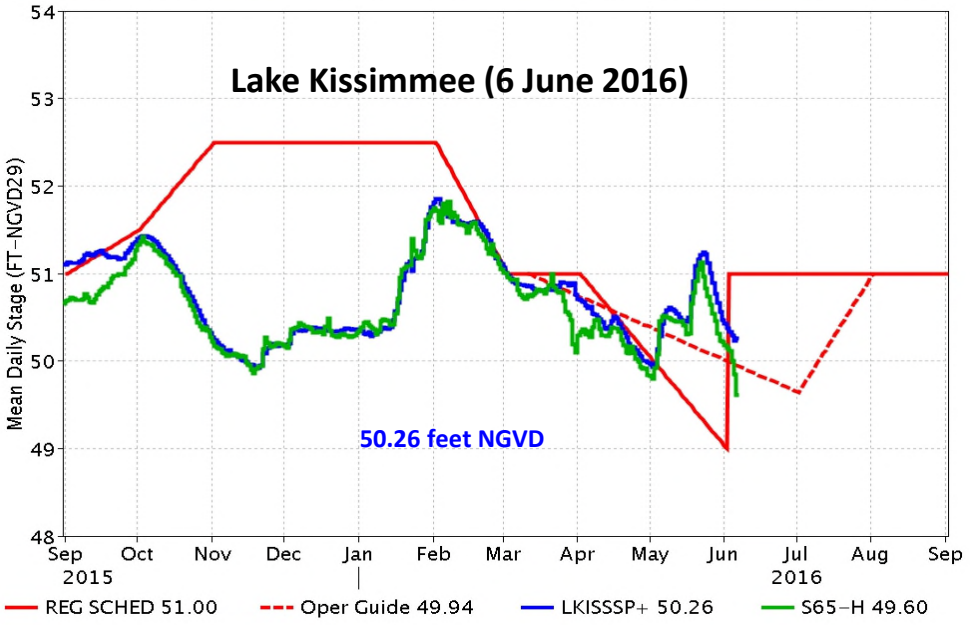


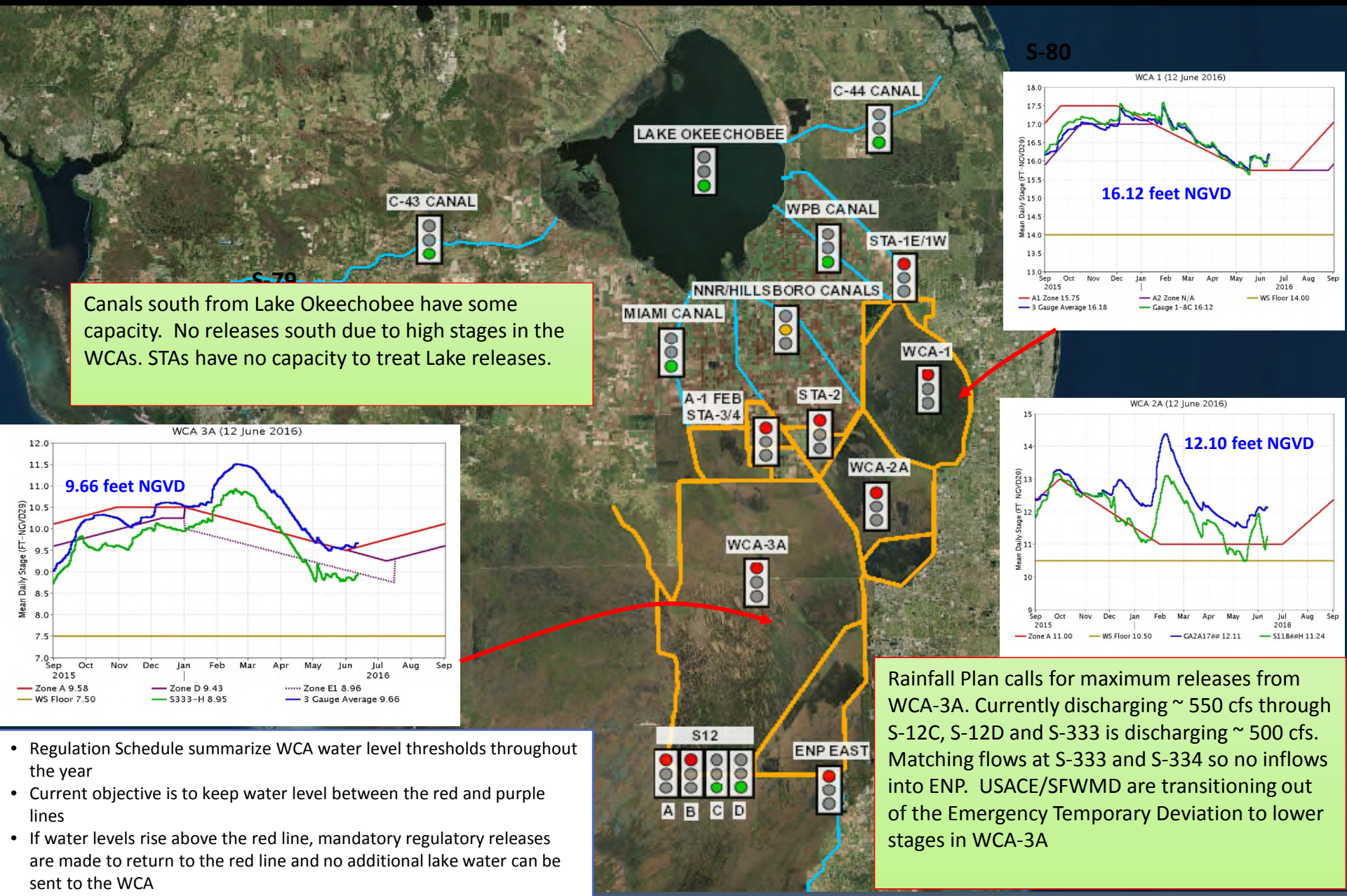


Kissimmee Basin

- Stages at East Toho, Toho and Kissimmee were receding parallel into the 2016 operational guidelines. Note recent preparation and response to TS Collin
- All other lakes are following the regulation schedule
- All lakes are approaching the zone below the summer pool elevation. Future stages are weather dependent







Canals south from Lake Okeechobee have some capacity. No releases south due to high stages in the WCAs. STAs have no capacity to treat Lake releases.

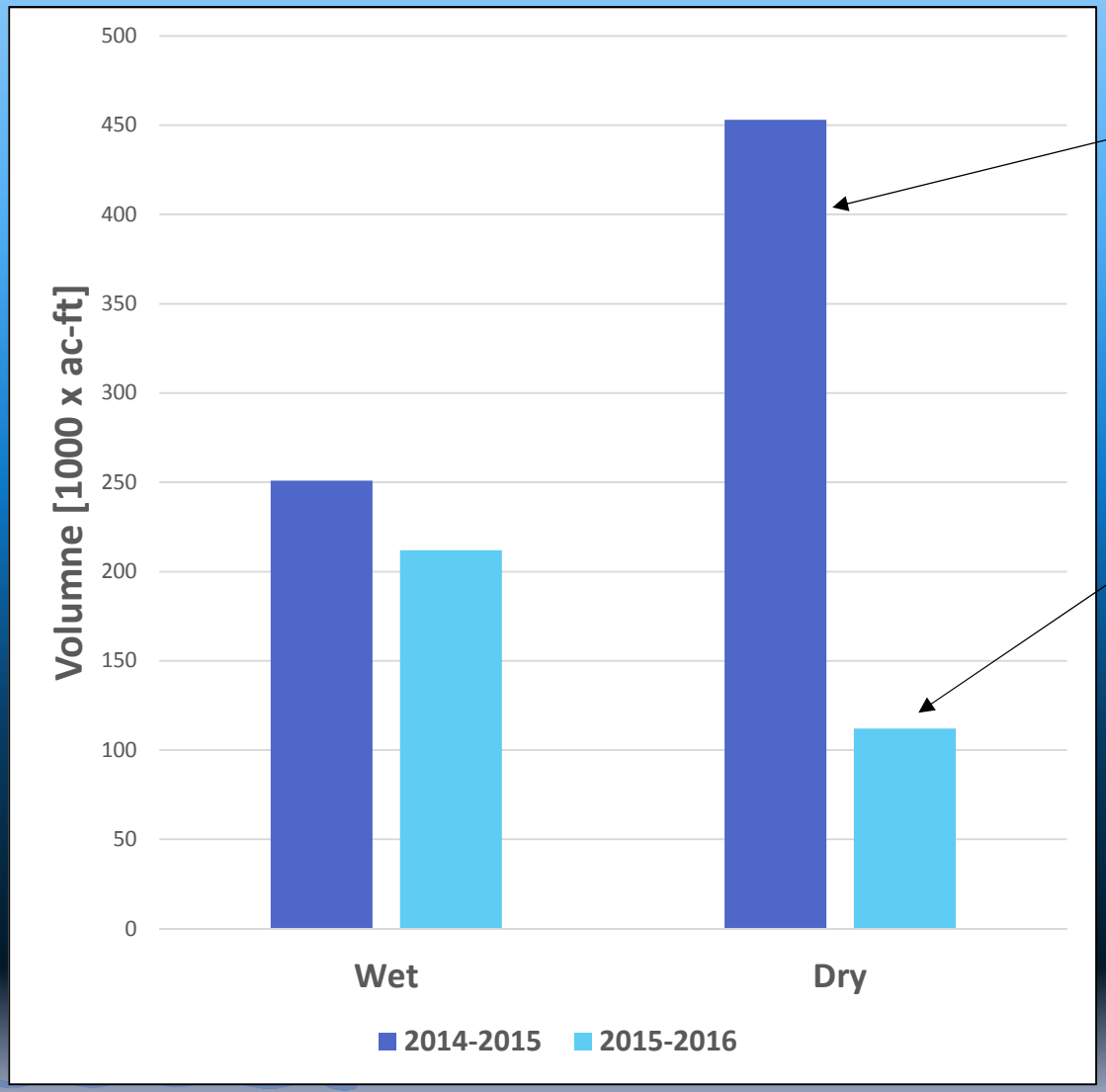
- Regulation Schedule summarize WCA water level thresholds throughout the year
- Current objective is to keep water level between the red and purple lines
- If water levels rise above the red line, mandatory regulatory releases are made to return to the red line and no additional lake water can be sent to the WCA

Rainfall Plan calls for maximum releases from WCA-3A. Currently discharging ~ 550 cfs through S-12C, S-12D and S-333 is discharging ~ 500 cfs. Matching flows at S-333 and S-334 so no inflows into ENP. USACE/SFWMD are transitioning out of the Emergency Temporary Deviation to lower stages in WCA-3A

sfwmd.gov

System considerations for sending water south for the period 05/31/2016-06/06/2016

Lake Releases South

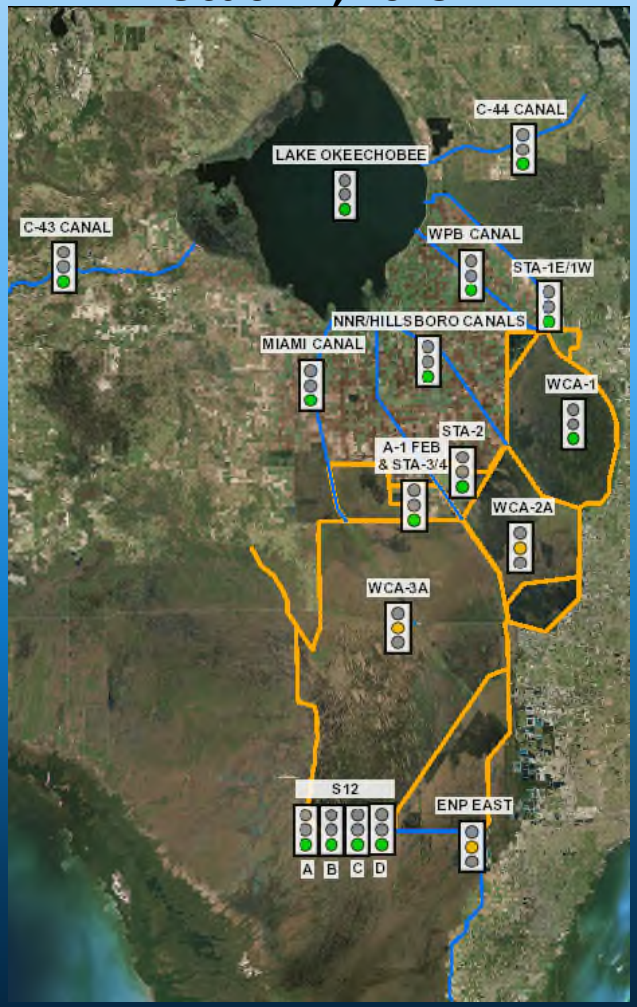


- WCA-3A remained below regulation schedule as releases south were maximized
- Rainfall: 51% of average

- El Nino conditions during the 2015-2016 Dry Season resulted in high stages in WCA-3A
- WCA-3A above schedule 80% of the time.
- Rainfall at 163% of average

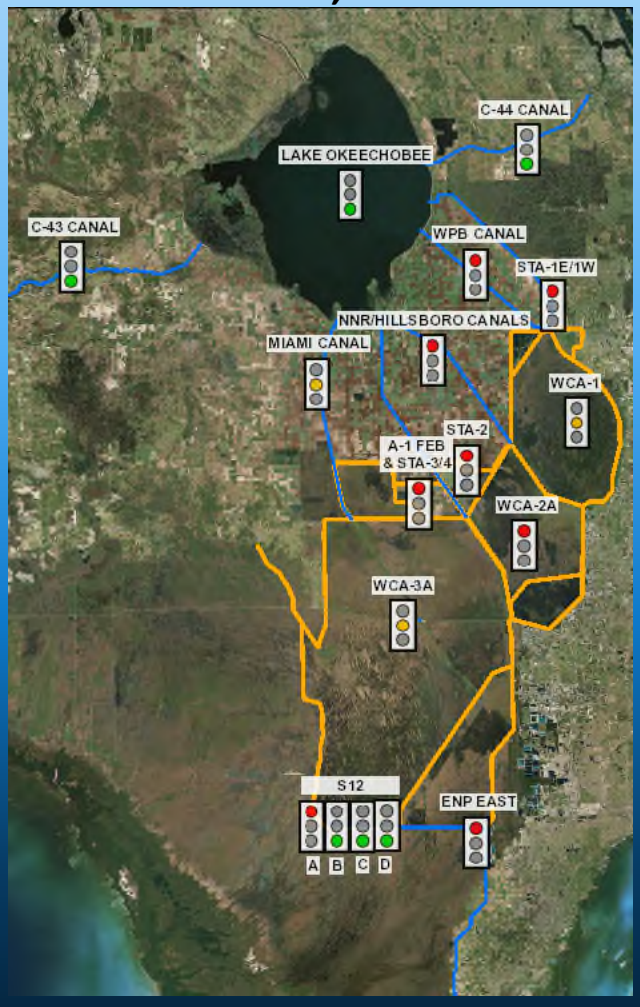
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Oct 6-12, 2015



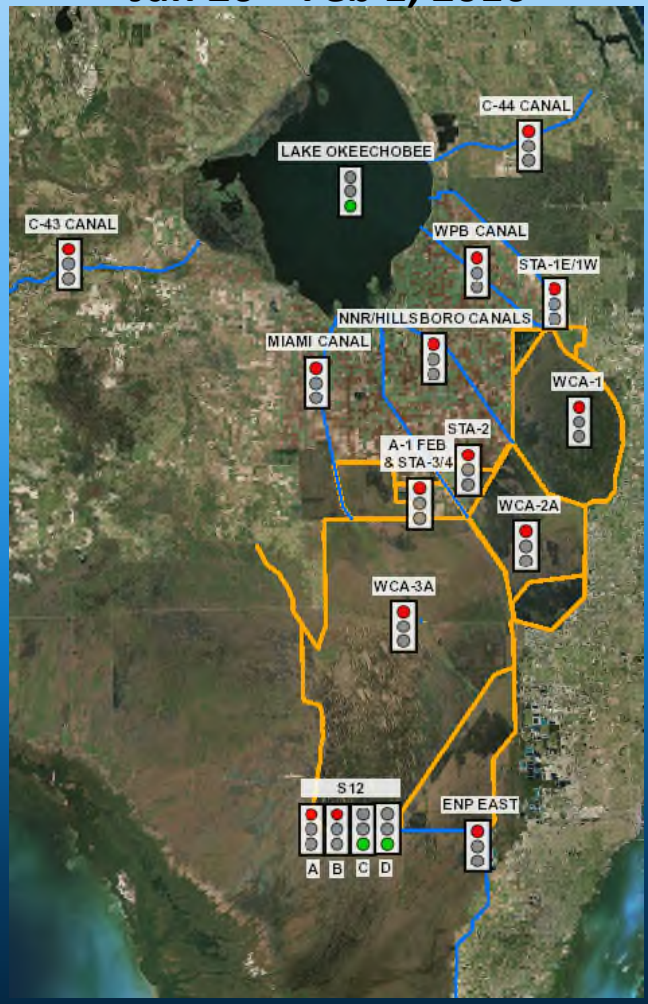
- LO water available
- Green/Yellow
- System unconstrained
- Reflects relatively dry conditions at the end of the wet season

Dec 1-7, 2015



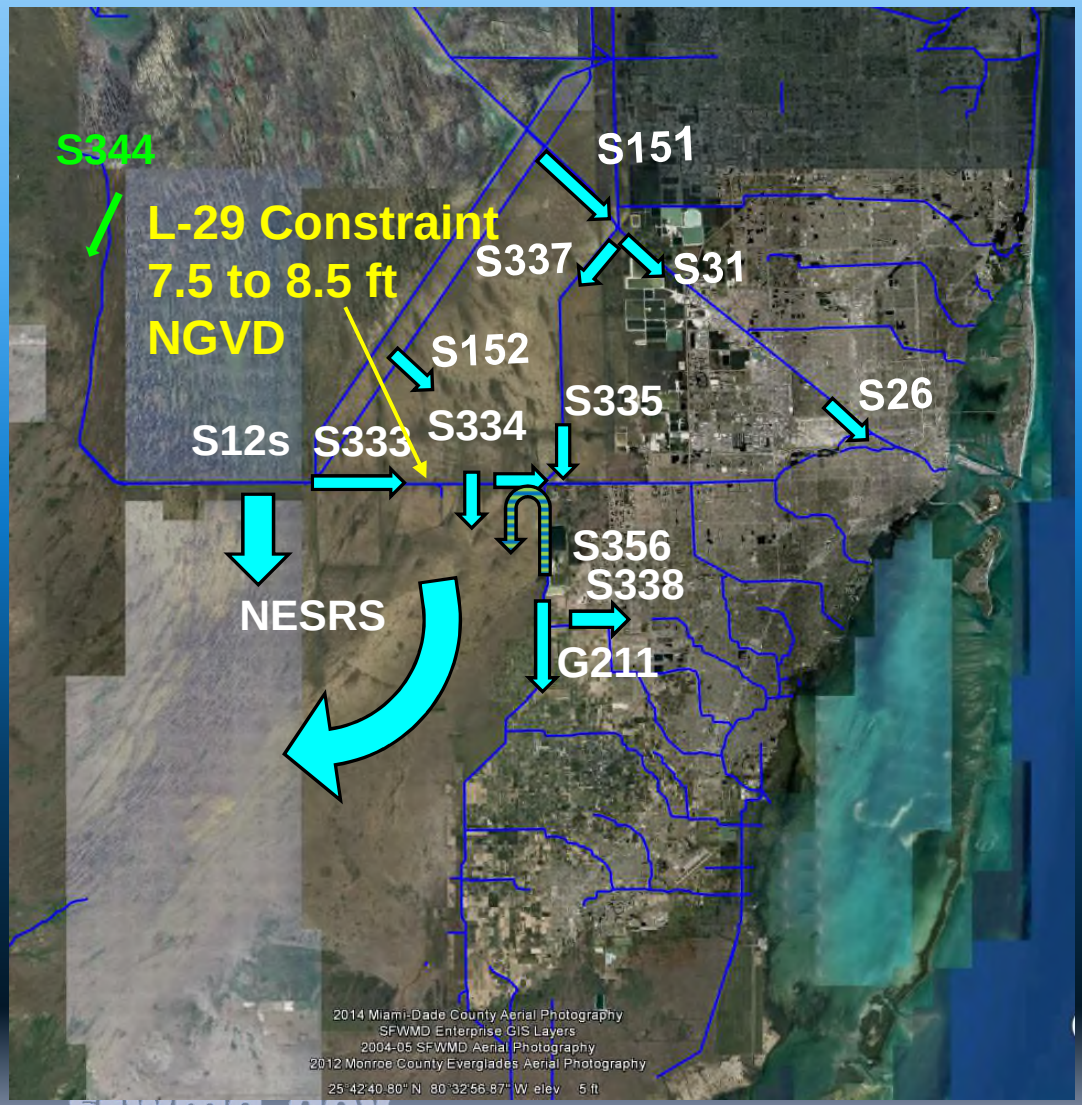
- LO water available
- Yellow/Red
- System mostly constrained
- Reflects 1.5 months of El Niño-induced rains

Jan 26 – Feb 1, 2016



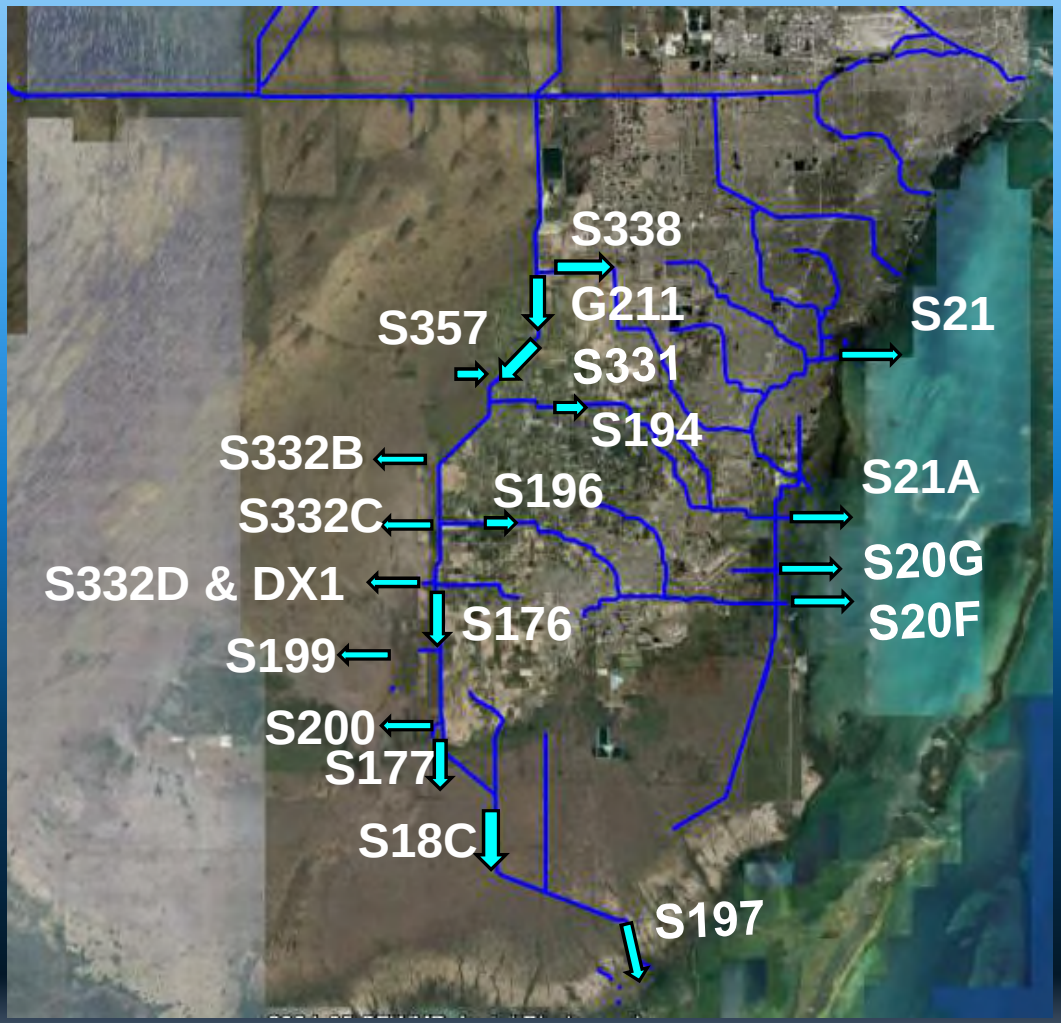
- LO water available
- Red
- System fully constrained
- Reflects the effect of a historical wet January and dry season

High Water Stages in Water Conservation Area 3A



- Water Conservation Area 3A releases through the L-30 canal (S-337, S-335)
- Raise L-29 stage limit from 7.5 to 8.5 feet
- Higher flows through S-333 into L-29
- Increase flows to Northeast Shark River Slough
- Use S-334 to moderate L-29
- Temporary pumps at S-355B
- District requested and was approved by U.S. Army Corps of Engineers for deviation to increase discharge through the L-28 at S-344

Flood Protection in South Dade Conveyance System



- Canals maintained at lower stages
- Flow diversions to the coast through canals such as C-1, C-102 and C-103 have been reduced
- Pumping towards Everglades National Park and the headwaters of Taylor Slough using the S-332s and S-199
- S-197 has been operated as necessary to provide additional flow getaway capacity

Release through L-28 at S-344

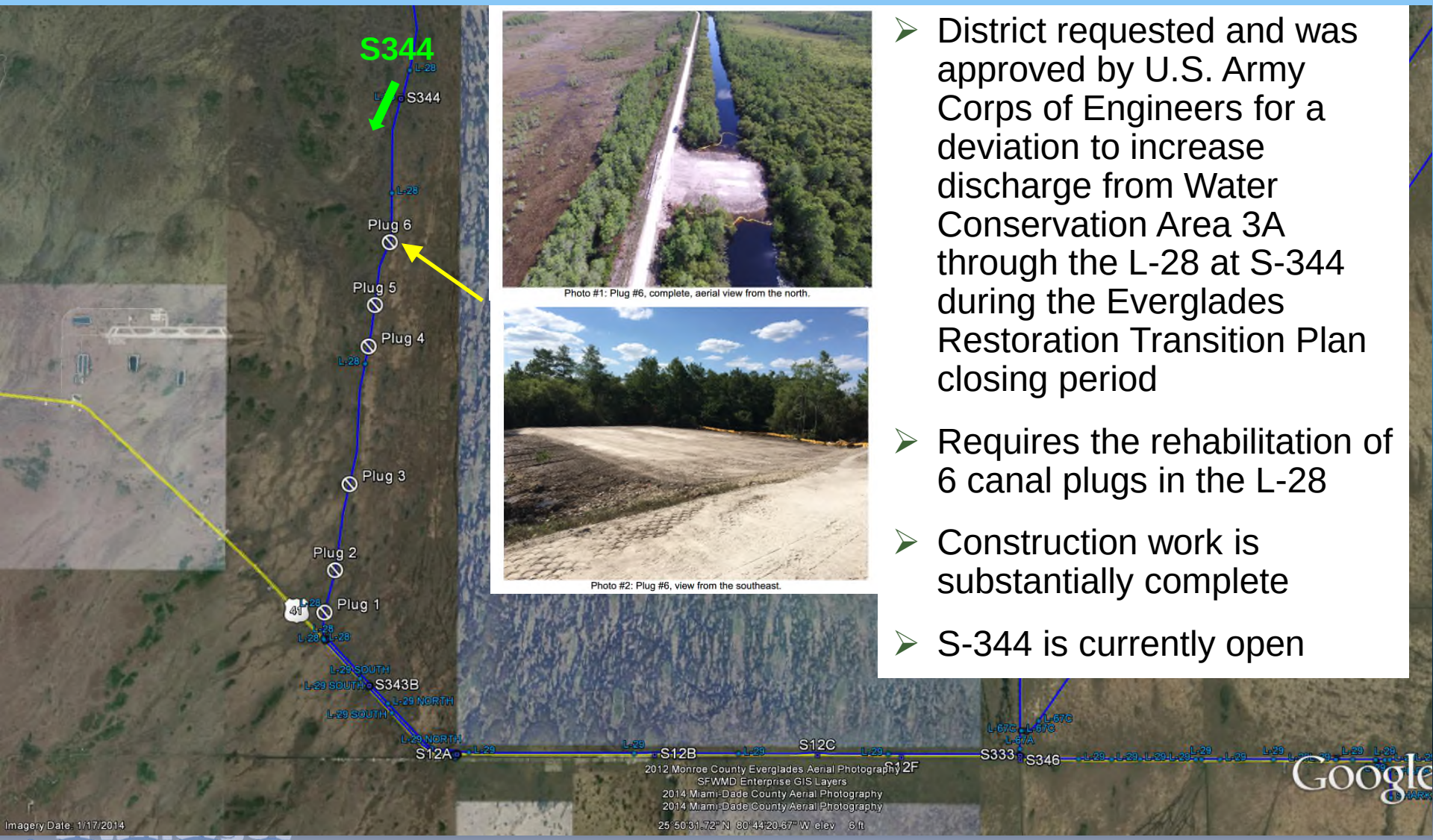


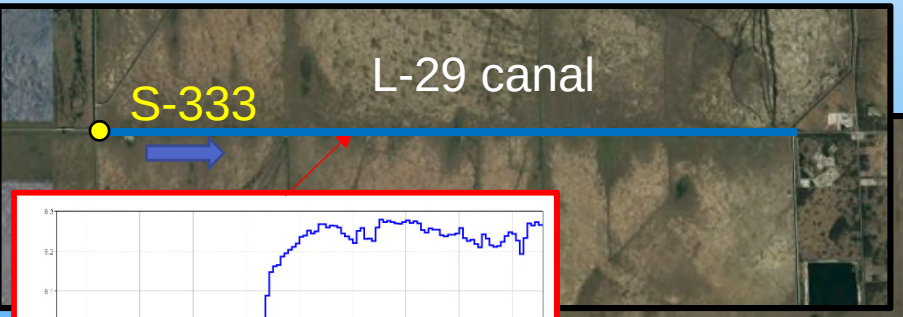
Photo #1: Plug #6, complete, aerial view from the north.

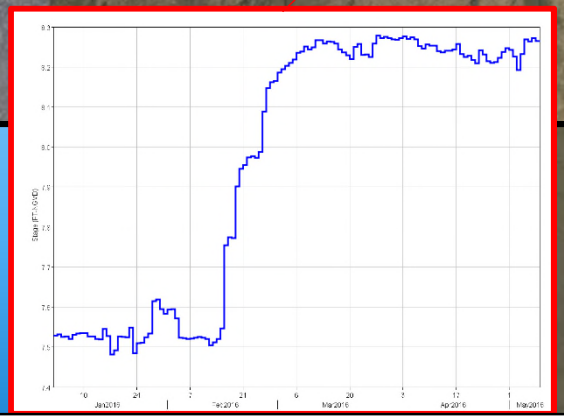
Photo #2: Plug #6, view from the southeast.

- District requested and was approved by U.S. Army Corps of Engineers for a deviation to increase discharge from Water Conservation Area 3A through the L-28 at S-344 during the Everglades Restoration Transition Plan closing period
- Requires the rehabilitation of 6 canal plugs in the L-28
- Construction work is substantially complete
- S-344 is currently open

S-355B Temporary Pumps

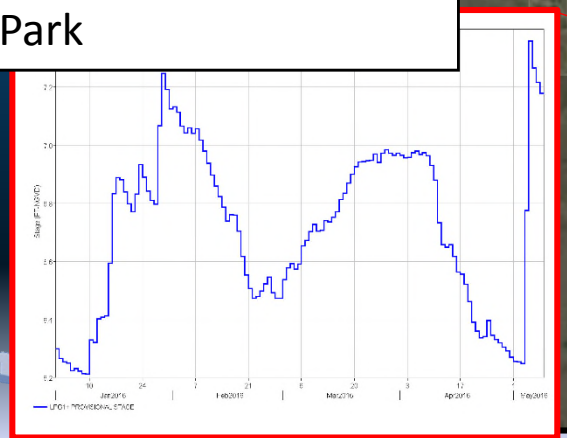
Water Levels





L-29 stage allowed up to 8.3 feet

LPG1 experience higher stages due to storm event and high waters in the Everglades National Park



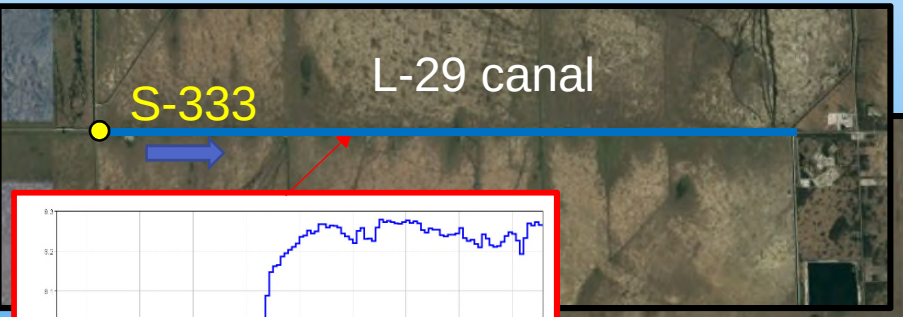
S-357 helps to maintain stage in the C-357 canal

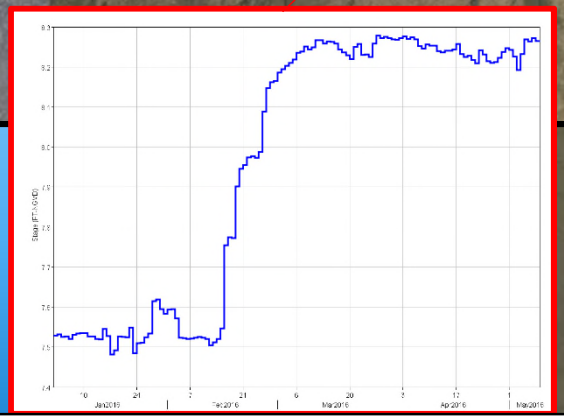
Sustained pumping at S-357 resulted in higher but acceptable stages in the detention area

Airboat Concessionaires

Airboat Concessionaires

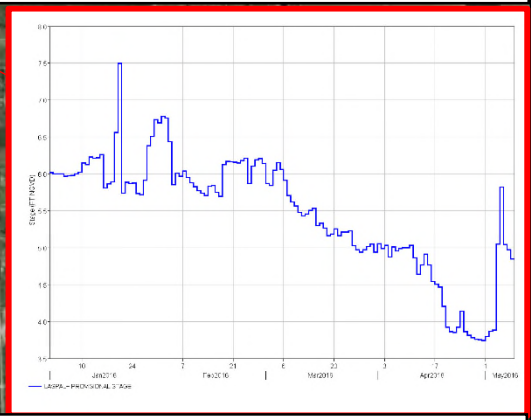
Water Levels



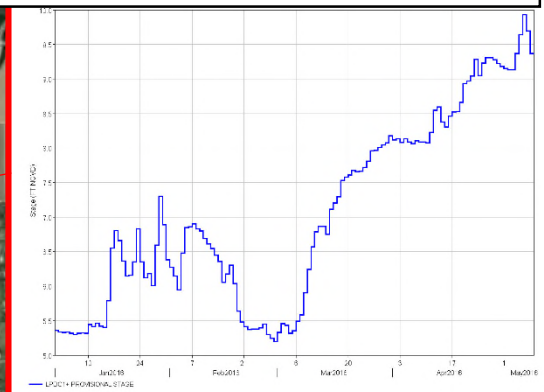


L-29 stage allowed up to 8.3 feet

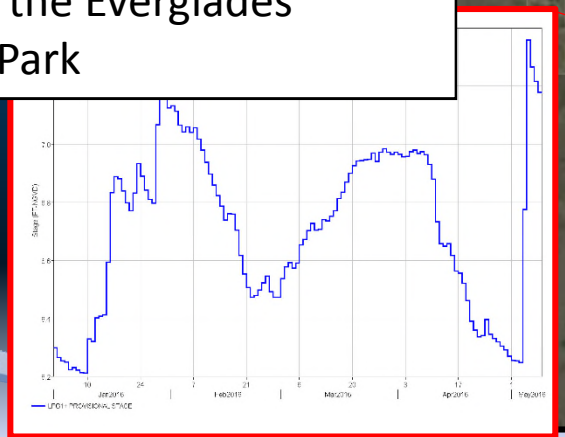
S-357 helps to maintain stage in the C-357 canal



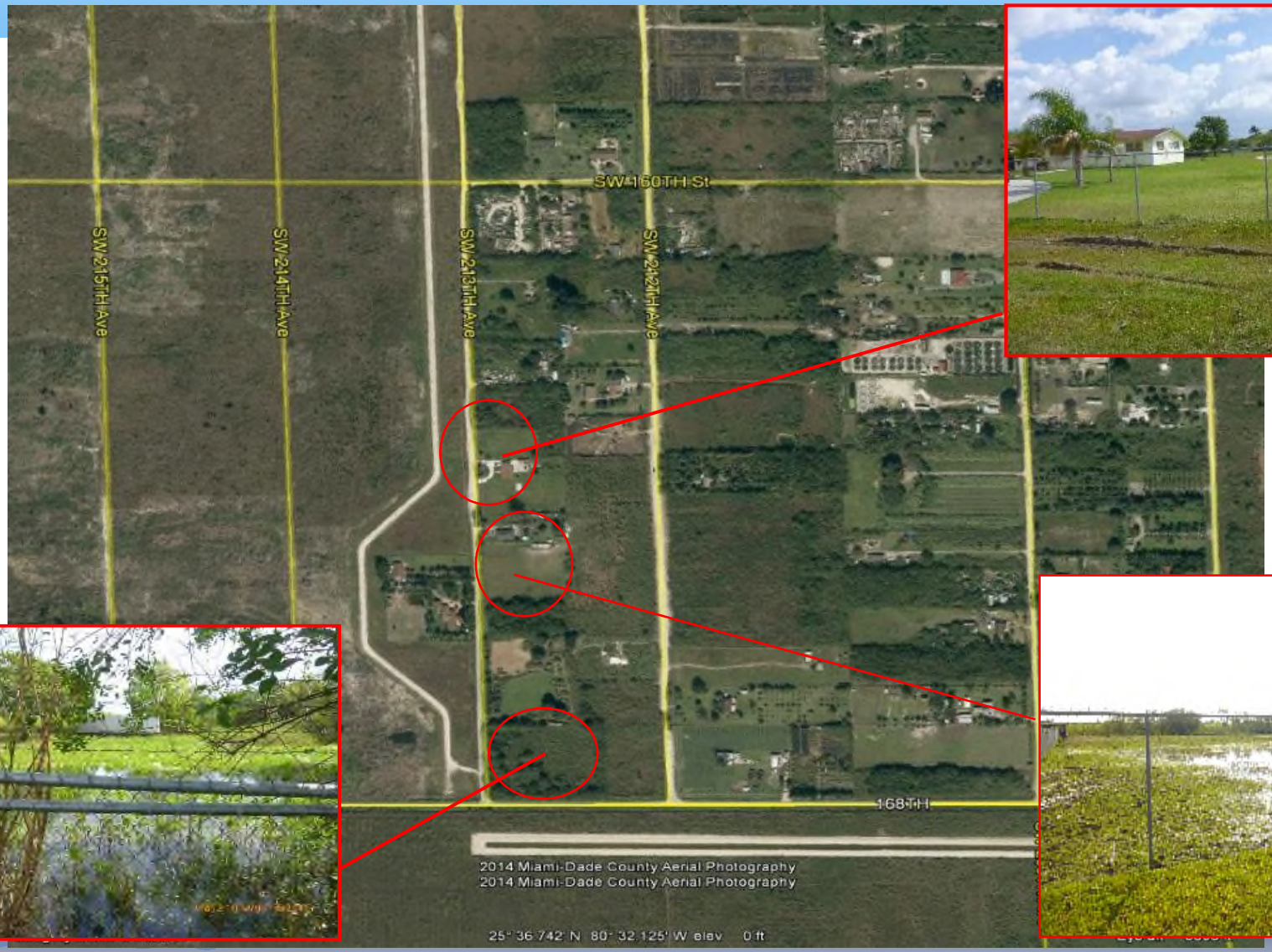
Sustained pumping at S-357 resulted in higher but acceptable stages in the detention area



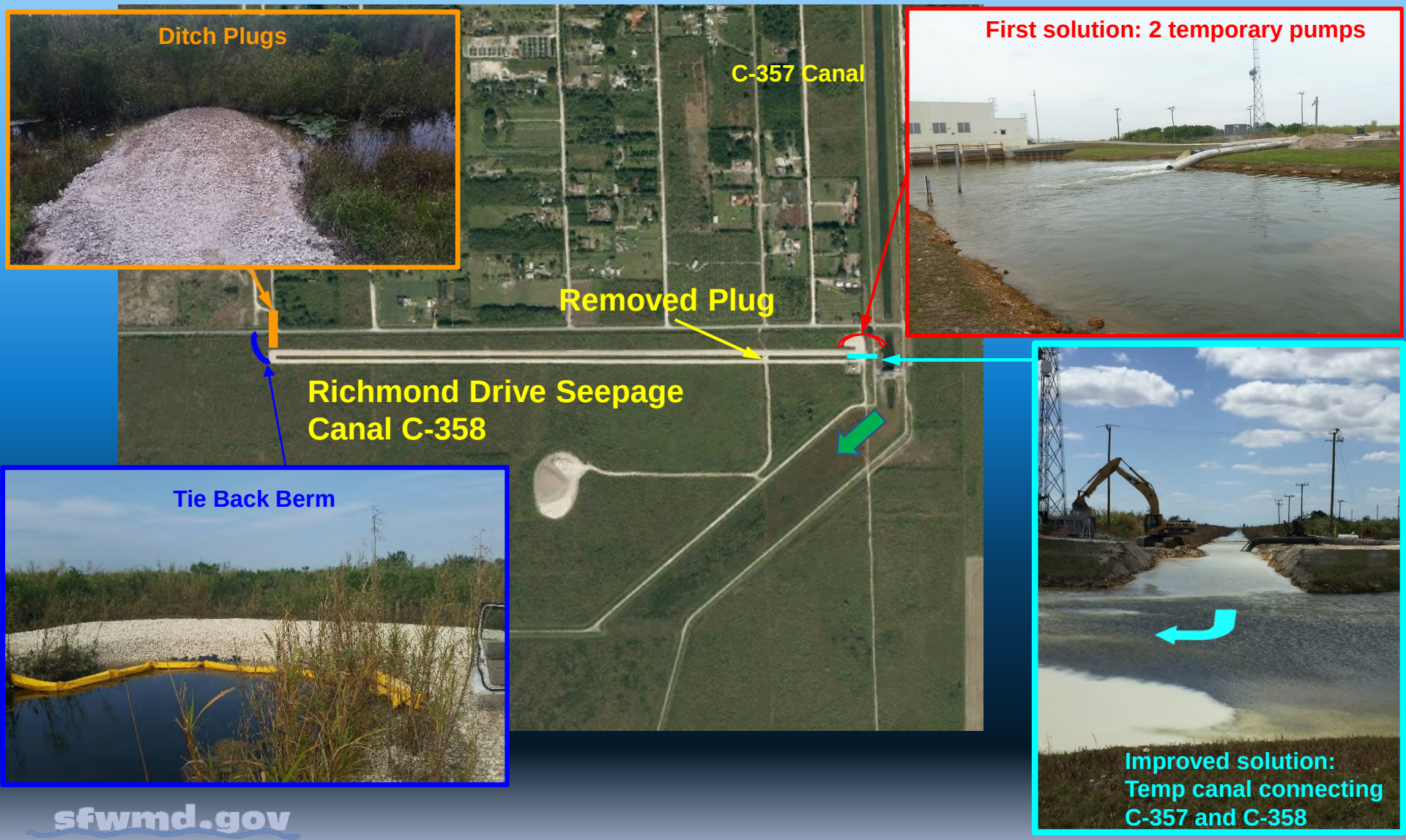
LPG1 experience higher stages due to storm event and high waters in the Everglades National Park



Water Conditions in 8.5 Square Mile Area



S-357N Temporary Mitigations in Place



Culverts at 8.5 Square Mile Detention Area

Three 36-inch Corrugated metal pipes with raisers

168TH

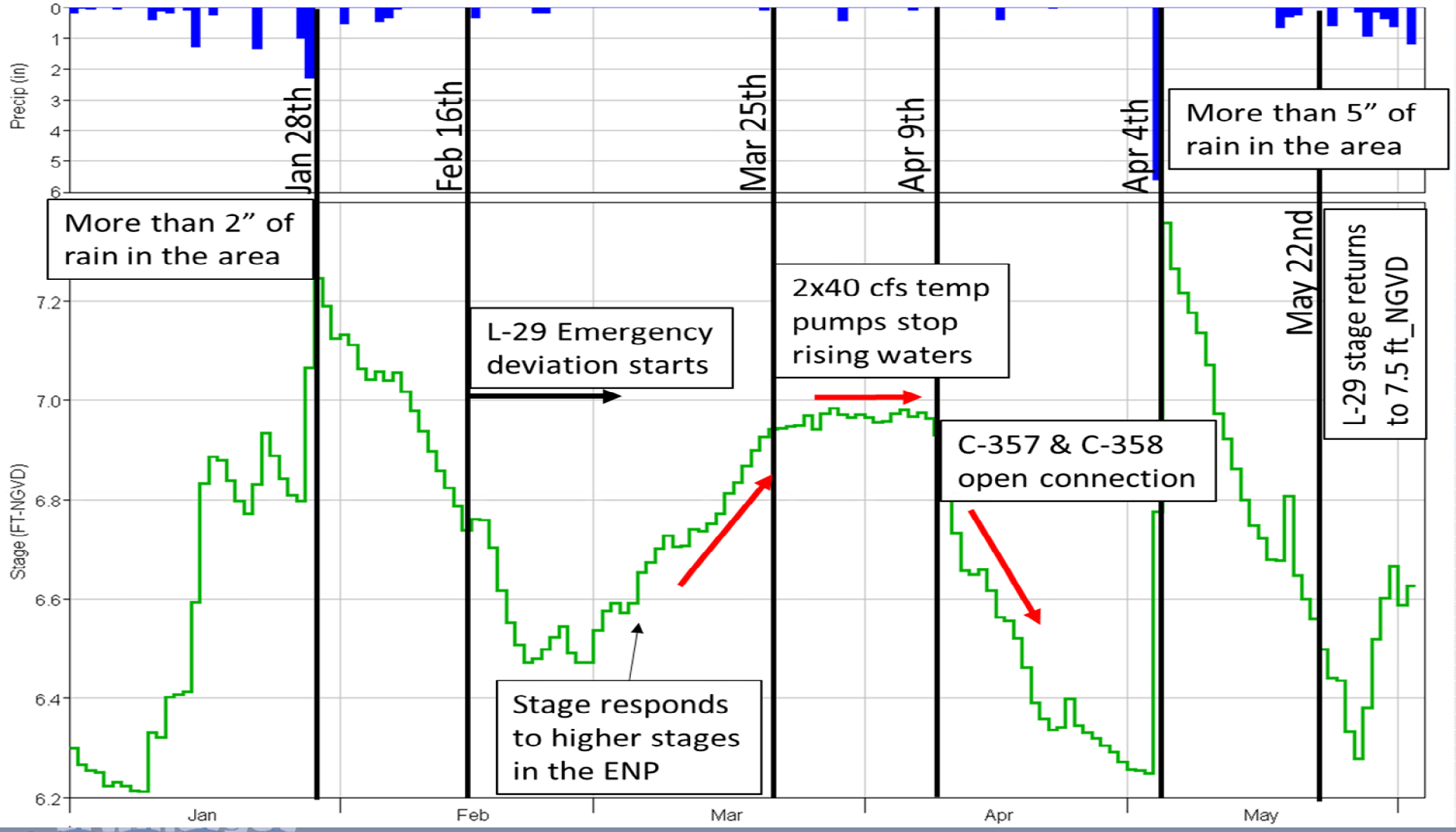
S-357

SW 209TH Ave

SW 208TH Ave

Culverts

8.5 Square Mile Area Groundwater Condition Along Richmond Drive



Questions